ETCR010 Split Type High Accuracy Leakage Current Sensor

User's Manual

Thanks for your purchase of ETCR010 High Accuracy Leakage Current Sensor of our company. For better use of the product, please make sure:

---to read this user manual in details.

---to abide by the safety regulations and precautions strictly.

◆Under any circumstance, it shall pay special attention on safety in use of this sensor.
◆Pay attention to words and symbols stick on the panel.
◆Keep the pliers clean, maintenance regularly.
◆Stop using the sensor when there is a rupture or break.
◆Please don't keep or store the sensor in the spot with high-temperature and moisture, or condensation, and under direct daylight radiation for a long time.
◆This sensor is only to be used, disassembled, and repaired by qualified personnel with authorization.
◆When it may cause hazard by continuous use for the reason of the sensor itself, it shall immediately stop using it and deposit it at once, leaving it for disposal by authorized agency.
◆For risk of danger icon in manual "⚠", users must perform safety operations strictly in compliance with the manual content.

I. Introduction

ETCR010 Split Type High Accuracy Leakage Current Sensor is used for measurement of high accuracy AC current, leakage current, high order harmonic current, phase, power energy, power, power factor. Adopt the latest CT technology, double shielding layer and split type design, no need to disconnect the measured circuits, non-contact, safe and fast. It can be connected with phase detection analyzer, industrial control equipment, data recorder, oscilloscope, harmonic analyzer, electric power quality analyzer, high precision digital multi-meter, etc. Widely applied in electricity, communication, meteorology, railway, oilfield, construction, measurement, scientific and research teaching unit, industrial and mining enterprises.

ETCR010 Split Type High Accuracy Leakage Current Sensor' core is made of special alloy, adopt the newest magnetic shielding techniques, can almost shield the influence from external magnetic field, to ensure the high precision, high stability and high reliability of perennial uninterrupted measurement.

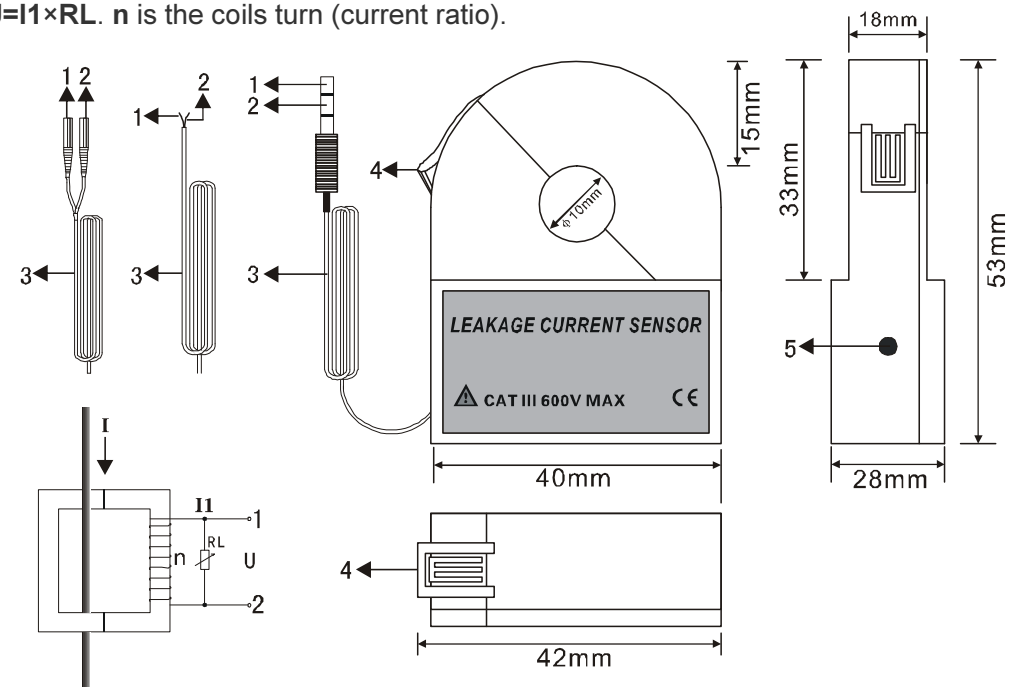
II. Technical Specifications

Function	Measurement of AC current, leakage current, high order harmonic current, phase, power energy, power, power factor
Test mode	Split Type CT
Clamp Size	Φ10mm(available for line ≤10mm)
Range	0-60A AC
Resolution	1uA AC
Accuracy	±1.0%FS(50/60Hz; 23℃±2℃,below 70%RH, keep the wire be in the center of hole)
Coils Turn	800:1(customize is available)
Phase Error	≤2°(50Hz/60Hz; 23℃±2℃)
Reference Load	RL: 0-600mA≤300ohm; 0-6A≤30ohm; 0-60A≤3ohm;

Shielding	With shielding layer, apply to complicated environment with interference
Output Interface	Current induction output
Output Mode	3.5mm audio plug(tail plug, banana pin, or BNC pin)
Output Wire Length	2m
Electric Field Interference	About 5mA when the external electric field 100A, 10mm nearby
Measured Wire Position	Approximately in the geometric center of the hole
Current Frequency	45H-60Hz(when measuring big current)
Frequency	10Hz-100kHz
Voltage of circuit	AC 600V
Dimension	53mm×42mm×28mm
Weight	125g
Working Environment	-20℃-50℃; below 80%rh
Storage Environment	-10℃-60℃; below 70%rh
Insulation Strength	AC 2kV/rms. (between core and shell)
Safety Rules	IEC1010-1, IEC1010-2-032, Pollution degree 2, CAT Ⅲ(600V)

III. Principle and Structure

The sensor induced output a current **I1**, the current **I1** generate voltage **U** on the external sampling load resistance **RL**, so the measured current **I** can be calculated by measuring **I1** or **U**. Among them, **I=n×I1**; **U=I1×RL**. **n** is the coils turn (current ratio).



1. Coil tap input 2. Coil tap output 3. Sensor output plug (3.5mm audio plug)
4. Lock area 5.hole of output line

⚠	**Clamp live wire or null line separately to measure the current of this line. (Note: single wire)**
	Clamp live wire and null line together to measure leakage current of single phase. (Note: 2 wires)
	Clamp earth wire to measure grounding line leakage current of electrical equipment. (Note: single wire)

⚠ ***Manufactured by***

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